

## Prana and electrons in health and beyond

Prana and electrons have overlapping properties in the subtle and gross domains respectively. Prana cannot be measured at this time; however, its interaction with the biosystem has been the subject of study in Ayurveda and Yoga. Even definition of death is based on loss of prana. Chi, the equivalent of prana in Traditional Chinese Medicine (TCM) is claimed to be measured through instruments and its loss has been observed at the time of death. Electrons have also come under study recently in health of individuals. Here, we have a complex and yet unexplored area of subtle energies that impacts health and may be useful in defining death.

### PRANA

In the perspective of Yoga, prana is the primordial energy of the universe. Prana is dispersed through the entire material world. "Prana is both macrocosmic and microcosmic and is the substratum of all life. Mahaprana (the great prana) is the cosmic, universal, all-encompassing energy out of which we draw substance through the breathing process" (p. 1).<sup>[1]</sup> Further, the author says, "The moment prana leaves the body consciousness departs because prana and consciousness are the two poles of one source – the self" (p. 2).<sup>[1]</sup> Here, then is a definition of death-prana leaving the body. Thus in most languages of India, death is referred to as prana leaving the physical body. Further, it is said that inadequate amount of prana in parts of the body could result in ill-health. Prana could be controlled in the tradition of Yoga not only for good health, but for managing the energy in the environment also.

Prana has some similarities to chi in TCM. While measurement of prana has not been accomplished, chi seems to have come under quantification. Many of the instruments related to acupuncture activity measurements either tacitly assume or claim to measure chi. Similar to prana, availability and circulation of chi in the body is related to health. Hypo- or hyperactivities of meridian functions are related to chi availability; with meridian connecting to organs, the organ integrity could also be measured, says the theory.

While both prana and chi seems to be related to cellular and organ function, a clear equivalence to physical or biochemical variables is not possible at this time. It should be noted that all biochemical processes are ultimately driven by electron transport. However, we are only able to track the functions of macroscopic events such a molecular function in a cell or an organ. It is not likely that this lacuna will be overcome any time soon; following electron transport is very subtle and seems to exceed the competency of present day technology. Perhaps electrons should be tagged with radio-active or other macroscopic elements but then, such tagging will change the transport of electrons themselves! Let us leave the question to electro-biochemists! Meanwhile, let us see how electrons are involved in evolution and in the human body maintaining health.


### ROLE OF ELECTRONS IN HEALTH

Electron is one of the fundamental particles in material evolution. It is postulated that electrons came into existence at an early stage of cosmogenesis when the universe went through a big bang and started cooling. In an extremely short time sequence after the big bang, perhaps in a matter of first 3 s, electrons emerged from the hot, primordial soup.<sup>[2]</sup> The universe is said to be about 13 billion years old, hence the first 3 s occurred a long time ago. However, electrons are stable and traceable fundamental particles and give rise to many other fundamental particles and molecules. Lack of adequate electron density in the body is purported to give rise to ill-health, leading from sleeplessness to perhaps even incidence of cancer. Thus electrons take part in all manner of physical, physiologic and perhaps also psychological stability and homeostasis.

Let us look at the role of electrons in health and in the process we call life.

Desaturation in cells maintains an electrical balance through electron mobility and electron-ion balance. When the chance for desaturation is lost, the cell seems to go out of control and disorder sets in. Protein molecules are the basic building blocks of the body and their activity is controlled by nucleic acids (deoxyribonucleic acid, ribonucleic acid) to act within specific boundaries. Removing electrons from its immediate environment could increase reactivity of a biological molecule. When an electron is removed, the molecule becomes a free radical and this we know now to be highly reactive.

The famous scientist and Noble Laureate, Dr. Albert Szent-Gyorgyi states, "The living state is the electronically

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desaturated state of protein ... Nature is simple but subtle" (p. 17).<sup>[3]</sup> He leads us into a fascinating discussion of how life could have evolved on earth based on oxygen as a strong electron acceptor; this leads to a high degree of desaturation of protein and corresponding high degree of differentiation and development. The complexity we see in life forms around us could be due to the subtle property of oxygen to accept electrons!

All living tissues seem to give signals in electron spin resonance (ESR) experiments. When a varying magnetic field at a particular microwave frequency is applied to a biological specimen the cell absorbs the energy imposed at specific resonance conditions. The ESR signal is obtained as a result of formation of free radicals during normal metabolism or in some abnormal conditions. In normal individuals, the body usually flushes out these free radicals. In cancer, however, the involved proteins have a low degree of desaturation. It is stated, "any factor that inhibits charge transfer and the desaturation of protein has to be oncogenic and any factor that promotes these must be carcinogenic" (p. 69).<sup>[3]</sup> As proteins are desaturated, the electrons attach themselves to oxygen molecules; chronic inadequate supply of oxygen could also lead to cancer. Unfortunately, cancer cells are not sick cells; they have high vitality and reproduce themselves very fast.

In summary, it may be said that lack of electrons in the protein mix of the body could lead to many disorders. Lack of oxygen as an acceptor of the excess electrons could also lead to the proliferation of cells leading to cancer. Thus, it is said, "Taking out electrons irreversibly means killing" (p. 18).<sup>[3]</sup>

There has been recent interest in the role of electrons in health. An interesting paper reviews the role of electrons as possible antioxidant in promoting health in people.<sup>[4]</sup> In a large number of studies, it has been documented that circadian cortisol rhythm is an important contributing factor for maintaining health. Disruption of this rhythm could lead to a number of health problems related to cardiovascular, autoimmune, mood related and even sleep disorders. A common factor in all this seems to be non-availability of adequate supply of electrons to the body. When electrons are made available through a simple method like earthing the bed or earthing the site of injury establishing a free flow of electrons from ground to the body, there seems to be dramatic improvements in the conditions.

Chronic inflammation is thought to be a precursor to many diseases including cancer. As a response to inflammation and invading organisms, immune cells of the body release oxidizing agents or free radicals. To restore electrical neutrality, these radicals tear away electrons from the

invading cells and in the process kill the cells. If the free radicals drift away from the site of work to new areas within the body, this could cause damage to normal cells.<sup>[4,5]</sup> Earthing a patient and facilitating the flow of electrons into the body reduces inflammation and lessens pain as seen through infrared photographic studies (p. 958).<sup>[5]</sup> The author says "The most reasonable hypothesis to explain the beneficial effects of earthing is that a direct earth connection enables both diurnal electrical rhythms and free electrons to flow from the earth to the body" (p. 955).<sup>[5]</sup>

Thus, it is clear from the above narration that invading cells could be destroyed through electron transfer from the invaders to immune cells. Availability of electrons from other sources like the earth could reduce free radical activity in the body. Szent-Gyorgyi has mentioned with considerable foresight that permanent loss of electrons in a biological system is equivalent to killing it. Hence, measuring the electron availability may be a method for determining health and even death of an organism.

## NEAR DEATH EXPERIENCES

There are many studies regarding near death experiences (NDE) and a complete journal is devoted to this enigmatic subject since 1980's. A recent survey from ten Dutch hospitals summarize a prospective study, wherein a total of 344 cardiac patients were resuscitated after a cardiac arrest. Based on EKG records, all the patients were declared clinically dead. Of this, 62 people (18%) who were resuscitated reported NDE.<sup>[6]</sup> There are also some dramatic single cases reported in NDE literature.<sup>[7,8]</sup> This enigma raises the following question: If a person is declared dead and then, after a while, he/she wakes up, is it not an indication that our definition of death is inadequate? We need to look at more fundamental causes for death or for life processes. Herein, the role of electrons in life processes and assessment of availability of electrons in a biosystem becomes important.

An instrument known as gas discharge visualization (GDV) seems to draw out electrons from finger tips and correlate them to the health status of organs connecting the finger segments as per acupuncture theory.<sup>[9,10]</sup> A high voltage pulse is applied at high frequency to the finger and the electrons that are drawn out impact the surrounding air molecules and create a gas discharge seen as a glow around the finger. These are termed GDV-grams. This is similar to Kirlian photography that was popular in the 1970s and 1980s. However, since the finger tips are related to acupuncture system and connected organs, it is normal to look at data represented to tease out health status of an individual. Further, there is a study by the same author, which shows the changes in the electron emissions and hence the light output from the fingers as a person goes

through the death process (p. 75).<sup>[9]</sup> Here, it is first useful to remember that all objects (including inanimate) gives rise to GDV-gram. So, even a dead tissue would give a light discharge, though the quantity of discharge is very low and sometimes goes down to zero (when all free electrons are drawn out).

There are three dramatic cases reported as persons goes through the process of death. One is natural death, the second is death due to accident and the third is a case of suicide studied by the authors. In normal death, the intensity of glow (number of electrons drawn out) slowly reduces to low levels (as in an inanimate matter) within 24 h. In both accident and suicide deaths, there are wild fluctuations in the intensity of glow, taking around 74 h in these cases to subside to inanimate levels. This is an unusual and dramatic observation; life processes in traumatic death takes at least three days to come to an end. There are many ways of interpreting the results, from slowing of death processes in traumatic cases to departure of a “vital element” that seems to struggle to leave the body that has become uninhabitable. We shall not tarry here since these thoughts are controversial, to say the least.

The result of these observations unfortunately only one of each case presented so far is that depletion of electrons could be a fundamental indicator of death. Thus, trying to study the electron availability could be fundamental not only for health reasons, but for understanding death process itself.

We might have a simplified interaction diagram between the subtle domain and the gross as shown here:

PRANA ⇔ CHI ⇔ ELECTRONS ⇔ HEALTH

The arrows indicate the interaction between the elements. These elements are distinct in conception and activity level. Prana is considered most subtle and non-physical,

next is chi which is grosser and is observable and lastly, electrons which interact with physical systems. This model needs to be tested through experimentation; suffice it to say at this time that a more fundamental model for life processes are required if we need to understand health in an organism and the death process.

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